

## § 250.413

Projection system for the surface and subsurface locations of the proposed well; and

(e) State the units and geodetic datum (including whether the datum is North American Datum 27 or 83) for these coordinates. If the datum was converted, you must state the method used for this conversion, since the various methods may produce different values.

### **§ 250.413 What must my description of well drilling design criteria address?**

Your description of well drilling design criteria must address:

- (a) Pore pressures;
- (b) Formation fracture gradients, adjusted for water depth;
- (c) Potential lost circulation zones;
- (d) Drilling fluid weights;
- (e) Casing setting depths;
- (f) Maximum anticipated surface pressures. For this section, maximum anticipated surface pressures are the pressures that you reasonably expect to be exerted upon a casing string and its related wellhead equipment. In calculating maximum anticipated surface pressures, you must consider: drilling, completion, and producing conditions; drilling fluid densities to be used below various casing strings; fracture gradients of the exposed formations; casing setting depths; total well depth; formation fluid types; safety margins; and other pertinent conditions. You must include the calculations used to determine the pressures for the drilling and the completion phases, including the anticipated surface pressure used for designing the production string;
- (g) A single plot containing estimated pore pressures, formation fracture gradients, proposed drilling fluid weights, and casing setting depths in true vertical measurements;
- (h) A summary report of the shallow hazards site survey that describes the geological and manmade conditions if not previously submitted; and
- (i) Permafrost zones, if applicable.

### **§ 250.414 What must my drilling prognosis include?**

Your drilling prognosis must include a brief description of the procedures you will follow in drilling the well.

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This prognosis includes but is not limited to the following:

- (a) Projected plans for coring at specified depths;
- (b) Projected plans for logging;
- (c) Planned safe drilling margin between proposed drilling fluid weights and estimated pore pressures. This safe drilling margin may be shown on the plot required by § 250.413(g);
- (d) Estimated depths to the top of significant marker formations;
- (e) Estimated depths to significant porous and permeable zones containing fresh water, oil, gas, or abnormally pressured formation fluids;
- (f) Estimated depths to major faults;
- (g) Estimated depths of permafrost, if applicable;
- (h) A list and description of all requests for using alternative procedures or departures from the requirements of this subpart in one place in the APD. You must explain how the alternative procedures afford an equal or greater degree of protection, safety, or performance, or why you need the departures; and
- (i) Projected plans for well testing (refer to § 250.460 for safety requirements).

### **§ 250.415 What must my casing and cementing programs include?**

Your casing and cementing programs must include:

- (a) Hole sizes and casing sizes, including: weights; grades; collapse, and burst values; types of connection; and setting depths (measured and true vertical depth (TVD));
- (b) Casing design safety factors for tension, collapse, and burst with the assumptions made to arrive at these values;
- (c) Type and amount of cement (in cubic feet) planned for each casing string;
- (d) In areas containing permafrost, setting depths for conductor and surface casing based on the anticipated depth of the permafrost. Your program must provide protection from thaw subsidence and freezeback effect, proper anchorage, and well control;
- (e) A statement of how you evaluated the best practices included in API RP 65, Recommended Practice for Cementing Shallow Water Flow Zones in Deep

Water Wells (as incorporated by reference in § 250.198), if you drill a well in water depths greater than 500 feet and are in either of the following two areas:

(1) An “area with an unknown shallow water flow potential” is a zone or geologic formation where neither the presence nor absence of potential for a shallow water flow has been confirmed.

(2) An “area known to contain a shallow water flow hazard” is a zone or geologic formation for which drilling has confirmed the presence of shallow water flow; and

(f) A written description of how you evaluated the best practices included in API RP 65–Part 2, Isolating Potential Flow Zones During Well Construction (as incorporated by reference in § 250.198). Your written description must identify the mechanical barriers and cementing practices you will use for each casing string (reference API RP 65–Part 2, Sections 3 and 4).

**§ 250.416 What must I include in the diverter and BOP descriptions?**

You must include in the diverter and BOP descriptions:

(a) A description of the diverter system and its operating procedures;

(b) A schematic drawing of the diverter system (plan and elevation views) that shows:

(1) The size of the annular BOP installed in the diverter housing;

(2) Spool outlet internal diameter(s);

(3) Diverter-line lengths and diameters; burst strengths and radius of curvature at each turn; and

(4) Valve type, size, working pressure rating, and location;

(c) A description of the BOP system and system components, including pressure ratings of BOP equipment and proposed BOP test pressures;

(d) A schematic drawing of the BOP system that shows the inside diameter of the BOP stack, number and type of preventers, all control systems and pods, location of choke and kill lines, and associated valves;

(e) Independent third party verification and supporting documentation that show the blind-shear rams installed in the BOP stack are capable of shearing any drill pipe in the hole under maximum anticipated surface pressure. The documentation must

include test results and calculations of shearing capacity of all pipe to be used in the well including correction for MASP;

(f) When you use a subsea BOP stack, independent third party verification that shows:

(1) The BOP stack is designed for the specific equipment on the rig and for the specific well design;

(2) The BOP stack has not been compromised or damaged from previous service;

(3) The BOP stack will operate in the conditions in which it will be used; and

(g) The qualifications of the independent third party referenced in paragraphs (e) and (f) of this section:

(1) The independent third party in paragraph (e) in this section must be a technical classification society; an API-licensed manufacturing, inspection, or certification firm; or a licensed professional engineering firm capable of providing the verifications required under this part. The independent third party must not be the original equipment manufacturer (OEM).

(2) You must:

(i) Include evidence that the firm you are using is reputable, the firm or its employees hold appropriate licenses to perform the verification in the appropriate jurisdiction, the firm carries industry-standard levels of professional liability insurance, and the firm has no record of violations of applicable law.

(ii) Ensure that an official representative of BSEE will have access to the location to witness any testing or inspections, and verify information submitted to BSEE. Prior to any shearing ram tests or inspections, you must notify the District Manager at least 24 hours in advance.

**§ 250.417 What must I provide if I plan to use a mobile offshore drilling unit (MODU)?**

If you plan to use a MODU, you must provide:

(a) *Fitness requirements.* You must provide information and data to demonstrate the drilling unit’s capability to perform at the proposed drilling location. This information must include